IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claim 60 without prejudice or disclaimer; and AMEND claims 1, 8-12, 20-32, 39-44, 47, and 54-59 in accordance with the following:

Claim 1 (Currently Amended): A method of optimizing recording conditions of an optical recording medium, comprising:

setting standard powers, including write, erase and bias powers, for test recording and recording a test write pattern in a plurality of tracks of the optical recording medium; and

checking a quality of a radio frequency signal reproduced from one of the plurality of tracks in which the write pattern is recorded and which is effected by writing in adjacent tracks to determine optimum powers, including optimum write, erase and bias powers for ~~the~~ optimized recording conditions,

wherein write pattern elements of the write pattern are optimized using at least one of a magnitude, an asymmetry value, and a jitter value of the radio frequency signal.

Claim 2 (Original): The method of claim 1, wherein the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 3 (Original): The method of claim 1, wherein the test write pattern comprises a first mark of length T, and a second mark of length NT which is longer than the first mark and in which power is saturated due to the formation of the marks, and a space, and wherein T is a cycle of a recording and/or reproducing clock and N is an integer.

Claim 4 (Original): The method of claim 2, wherein, when the optical recording medium uses a run-length-limited (RLL) (1, 7) code, the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 5 (Original): The method of claim 2, wherein, when the optical recording medium uses an RLL (1, 7) code, the test write pattern comprises a mark of length 2T and a mark of length 5T, and a space.

Claim 6 (Original): The method of claim 2, wherein, when the optical recording medium uses a run-length-limited (RLL) (2, 6) code, the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 7 (Original): The method of claim 2, wherein, when the optical recording medium uses a run-length-limited (RLL) (2, 10) code, the test write pattern comprises a mark of length 3T and a mark of length 6T, and a space.

Claim 8 (Currently Amended): The method of claim 1, wherein the ~~checking further comprises optimizing power conditions for the test write pattern~~optimum powers, including the optimum write, erase and bias powers, are checked using ~~a~~the magnitude of the radio frequency signal.

Claim 9 (Currently Amended): The method of claim 1, wherein the ~~checking further comprises optimizing a condition of the write pattern~~ standard powers, including the write, erase and bias powers, are adjusted respectively until the optimum powers are obtained, using the magnitude of the radio frequency signal.

Claim 10 (Currently Amended): The method of claim 1, wherein the checking further comprises optimizing ~~a condition~~write pattern elements of the write pattern using ~~an~~the asymmetry value of the radio frequency signal.

Claim 11 (Currently Amended): The method of claim 1, wherein the checking further comprises optimizing ~~a condition~~write pattern elements of the write pattern using ~~a~~the jitter value of the radio frequency signal.

Claim 12 (Currently Amended): A method of determining optimum powers

necessary for recording by performing test recording on an optical recording medium, comprising:

setting standard powers, including write, erase and bias powers, for test recording and recording a test write pattern in a plurality of tracks of the optical recording medium; and

determining ~~the~~ optimum powers, including optimum write, erase and bias powers, using ~~a magnitude of~~ a radio frequency signal reproduced from one of the plurality of tracks effected by writing in adjacent tracks,

wherein write pattern elements of the write pattern are optimized using at least one of a magnitude, an asymmetry value, and a jitter value of the radio frequency signal.

Claim 13 (Original): The method of claim 12, wherein the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 14 (Original): The method of claim 12, wherein the test write pattern comprises a first mark of length T, and a second mark of length NT which is longer than the first mark and in which power is saturated due to the formation of the marks, and a space, and wherein T is a cycle of a recording and/or reproducing clock and N is an integer.

Claim 15 (Original): The method of claim 13, wherein, when the optical recording medium uses a run-length-limited (RLL) (1, 7) code, the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 16 (Original): The method of claim 13, wherein, when the optical recording medium uses an RLL (1, 7) code, the test write pattern comprises a mark of length 2T and a mark of length 5T, and a space.

Claim 17 (Original): The method of claim 13, wherein, when the optical recording medium uses a run-length-limited (RLL) (2, 6) code, the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 18 (Original): The method of claim 13, wherein, when the optical recording medium uses a run-length-limited (RLL) (2, 10) code, the test write pattern comprises

a mark of length 3T and a mark of length 6T, and a space.

Claim 19 (Original): The method of claim 12, wherein the magnitude of the radio frequency signal is determined to be a peak-to-peak value of a radio frequency signal for a mark of length T of the test write pattern in which a power is saturated due to the formation of marks.

Claim 20 (Currently Amended): The method of claim 12, wherein the determining comprises:

reproducing the test write pattern recorded in a middle track of the plurality of tracks effected by writing on adjacent tracks to output a radio frequency signal; and

fixing two of the standard write, bias, and erase powers and varying the other one of the standard write, bias, and erase powers within a range to determine the optimum write, bias, and erase powers when the magnitude of the radio frequency signal is at a maximum.

Claim 21 (Currently Amended): The method of claim 12, wherein ~~the recording comprises:~~

~~setting standard write, erase, and bias powers for recording the test write pattern; and~~

~~recording the test write pattern in the plurality of tracks~~ each of the standard powers, including write, erase and bias powers, is adjusted for test recording until the magnitude of the radio frequency signal is at a maximum so as to determine the optimum powers, including optimum write, erase and bias powers.

Claim 22 (Currently Amended): The method of claim 21, wherein the determining comprises:

reproducing, by a radio frequency signal, the test write pattern recorded in a middle track of the plurality of tracks effected by writing on adjacent tracks;

detecting an envelope of the radio frequency signal to detect a maximum amplitude of the radio frequency signal;

fixing the standard write and bias powers and varying the standard erase power within a range to determine whether the magnitude of the radio frequency signal is the maximum amplitude value,

wherein, when the magnitude of the radio frequency is not the maximum amplitude, repeating the reproducing, detecting, and fixing, and wherein, when the magnitude of the radio frequency is the maximum amplitude value, determining the erase power is an optimum erase power.

Claim 23 (Currently Amended): The method of claim 22, wherein the determining further comprises:

fixing the standard bias power and the optimum erase power, and varying the standard write power within a range to determine whether the magnitude of the radio frequency signal is the maximum amplitude value,

wherein, when the magnitude of the radio frequency signal is not the maximum amplitude, repeating the reproducing, detecting, and fixing, and wherein, when the magnitude of the radio frequency signal is the maximum amplitude value, determining the write power is an optimum write power.

Claim 24 (Currently Amended): The method of claim 23, wherein the determining further comprises:

fixing the optimum erase power and the optimum write power, and varying the standard bias power within a range to determine whether the magnitude of the radio frequency signal is the maximum amplitude value,

wherein, when the magnitude of the radio frequency signal is not the maximum amplitude, repeating the reproducing, detecting, and fixing, and wherein, when the magnitude of the radio frequency signal is the maximum amplitude value, determining the bias power is an optimum bias power.

Claim 25 (Currently Amended): The method of claim 12, further comprising:

~~setting the optimum powers determined in the determining and recording the test write pattern;~~

reproducing the test write pattern recorded on the optical recording medium to output the radio frequency signal; and

determining the ~~test write pattern~~optimum powers, including optimum write, erase and bias powers, using the magnitude of the radio frequency signal.

Claim 26 (Currently Amended): The method of claim 25, wherein, ~~in the test write pattern determining,~~ when the magnitude of the radio frequency signal is a maximum amplitude, a write pattern element indicating a period of time for which a cooling pulse lasts is determined.

Claim 27 (Currently Amended): The method of claim 25, further comprising ~~determining~~optimizing write pattern elements of the test write pattern using ~~an~~the asymmetry value of the radio frequency signal.

Claim 28 (Currently Amended): The method of claim 27, wherein, ~~in the test write pattern determining,~~ when the asymmetry value of the radio frequency signal is at a minimum, a write pattern element indicating a shift amount of a starting edge of a first pulse is determined.

Claim 29 (Currently Amended): The method of claim 25, further comprising optimizing write pattern elements of ~~determining~~ the write pattern using ~~a~~the jitter value of the radio frequency signal.

Claim 30 (Currently Amended): The method of claim 29, wherein, ~~in the determining the write pattern using a jitter value,~~ when the jitter value of the radio frequency signal is at a minimum, a write pattern element indicating a width of the first plus is determined.

Claim 31 (Currently Amended): The method of claim 29, wherein, ~~in the test write pattern determining,~~ when the jitter value of the radio frequency signal is at a minimum, a write pattern element indicating a width of multi-pluses is determined.

Claim 32 (Currently Amended): A method of determining a write pattern by performing test recording on an optical recording medium, comprising:

setting write pattern elements and recording a test write pattern on the optical recording medium;

reproducing the test write pattern to output a radio frequency signal; and

determining a write pattern with optimum write pattern elements, based on adjusting the set write pattern elements using ~~a magnitude of~~ the radio frequency signal,

wherein write pattern elements of the write pattern are optimized using at least one of a magnitude, an asymmetry value, and a jitter value of the radio frequency signal.

Claim 33 (Original): The method of claim 32, wherein the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 34 (Original): The method of claim 32, wherein the test write pattern comprises a first mark of length T, and a second mark of length NT which is longer than the first mark and in which power is saturated due to the formation of the marks, and a space, and wherein T is a cycle of a recording and/or reproducing clock and N is an integer.

Claim 35 (Original): The method of claim 33, wherein, when the optical recording medium uses a run-length-limited (RLL) (1, 7) code, the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 36 (Original): The method of claim 33, wherein, when the optical recording medium uses an RLL (1, 7) code, the test write pattern comprises a mark of length 2T and a mark of length 5T, and a space.

Claim 37 (Original): The method of claim 33, wherein, when the optical recording medium uses a run-length-limited (RLL) (2, 6) code, the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 38 (Original): The method of claim 33, wherein, when the optical recording medium uses a run-length-limited (RLL) (2, 10) code, the test write pattern comprises a mark of length 3T and a mark of length 6T, and a space.

Claim 39 (Currently Amended): The method of claim 32, wherein, ~~in the determining,~~ when the magnitude of the radio frequency signal is a maximum amplitude value, a write pattern element indicating a period of time for which a cooling pulse lasts is determined.

Claim 40 (Currently Amended): The method of claim 32, wherein, when ~~further~~

~~comprising determining the write pattern using an~~ the asymmetry value of the radio frequency signal is at a minimum value and the magnitude of the radio frequency signal is at a maximum amplitude value, the set write pattern elements indicating a shift amount of a starting edge of the first pulse and a period of time for which a cooling pulse lasts are adjusted so as to obtain respective optimum write pattern elements for the write pattern.

Claim 41 (Currently Amended): The method of claim 40, wherein, ~~in the determining the write pattern using an asymmetry value,~~ when the asymmetry value of the radio frequency signal is at a minimum value, a write pattern element indicating a shift amount of a starting edge of a first pulse is determined.

Claim 42 (Currently Amended): The method of claim 32, ~~further comprising determining the write pattern using a~~ wherein, when the jitter value of the radio frequency signal is at a minimum value, the set write pattern elements indicating a width of a first pulse and a width of multi-pulses are adjusted for test recording so as to obtain respective optimum write pattern elements for the write pattern.

Claim 43 (Currently Amended): The method of ~~claim~~ claim 42, wherein, ~~in the determining the write pattern using a jitter value,~~ when the jitter value of the radio frequency signal is at a minimum value, a write pattern element indicating a width of the first ~~plus~~pulse is determined.

Claim 44 (Currently Amended): The method of claim 42, wherein, ~~in the determining the write pattern using a jitter value,~~ when the jitter value of the radio frequency signal is at a minimum value, a write pattern element indicating a width of ~~multi-pluses~~multi-pulses is determined.

Claim 45 (Original): A method of determining a write pattern by performing test recording on an optical recording medium, comprising:

fixing a first write pattern element indicating a width of a first pulse and a second write pattern element indicating a width of multi-pulses, setting a third write pattern element indicating a shift amount of a starting edge of the first pulse, and setting a fourth write pattern element

indicating a period of time for which a cooling pulse lasts to record a test write pattern;

reproducing the test write pattern to output a radio frequency signal;

detecting an asymmetry of the radio frequency signal;

detecting an envelope of the radio frequency signal; and

determining the third write pattern element using the asymmetry of the radio frequency signal and determining the fourth write pattern element using the envelope of the radio frequency signal.

Claim 46 (Original): The method of claim 45, further comprising:

detecting a jitter of the radio frequency signal;

fixing the third and fourth write pattern elements, re-setting the first and second write pattern elements, and recording the test write pattern; and

determining the first and second write pattern elements using the jitter of the radio frequency signal.

Claim 47 (Currently Amended): An optical recording and/or reproducing apparatus comprising:

a pickup & a radio frequency signal detector ~~that records~~arranged to record a test write pattern in one or more tracks on an optical recording medium, and ~~reproduces~~reproduce the test write pattern recorded in one of the tracks effected by writing in adjacent tracks;

a first detector ~~which detects~~ arranged to detect a ~~magnitude of a~~ radio frequency signal obtained from reproducing the test write pattern; and

a system controller ~~which determines~~arranged to set standard powers, including write, erase and bias powers for test recording before the test write pattern is recorded in one or more tracks on the optical recording medium, and to determine optimum powers, including optimum write, erase and bias powers, using the ~~magnitude of the~~ radio frequency signal~~.~~,

wherein write pattern elements of the write pattern are optimized using at least one of a magnitude, an asymmetry value, and a jitter value of the radio frequency signal.

Claim 48 (Original): The optical recording and/or reproducing apparatus of claim 47, wherein the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 49 (Original): The optical recording and/or reproducing apparatus of claim 47, wherein the test write pattern comprises a first mark of length T, and a second mark of length NT which is longer than the first mark and in which power is saturated due to the formation of the marks, and a space, and wherein T is a cycle of a recording and/or reproducing clock and N is an integer.

Claim 50 (Original): The optical recording and/or reproducing apparatus of claim 48, wherein, when the optical recording medium uses a run-length-limited (RLL) (1, 7) code, the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 51 (Original): The method of claim 48, wherein, when the optical recording medium uses an RLL (1, 7) code, the test write pattern comprises a mark of length 2T and a mark of length 5T, and a space.

Claim 52 (Original): The optical recording and/or reproducing apparatus of claim 48, wherein, when the optical recording medium uses a run-length-limited (RLL) (2, 6) code, the test write pattern comprises a combination of marks of two or more different lengths and a space.

Claim 53 (Original): The method of claim 48, wherein, when the optical recording medium uses a run-length-limited (RLL) (2, 10) code, the test write pattern comprises a mark of length 3T and a mark of length 6T, and a space.

Claim 54 (Currently Amended): The optical recording and/or reproducing apparatus of claim 47, wherein the system controller determines ~~optimized~~optimum write, erase, and bias powers necessary for recording when the radio frequency signal for the test write pattern has a maximum amplitude value.

Claim 55 (Currently Amended): The optical recording and/or reproducing apparatus of claim 47, further comprising:

a second detector ~~which detects~~arranged to detect ~~an~~the asymmetry value of the radio frequency signal; and

a third detector ~~which detects~~arranged to detect ~~a~~the jitter value of the radio frequency signal.

Claim 56 (Currently Amended): The optical recording and/or reproducing apparatus of claim 55, wherein the system controller determines an optimized write pattern element indicating a shift amount of a starting edge of a first pulse using the ~~magnitude~~asymmetry value of the radio frequency signal for the test write pattern.

Claim 57 (Currently Amended): The optical recording and/or reproducing apparatus of claim 55, wherein the system controller determines an optimized write pattern element indicating a period of time for which a cooling pulse lasts using the ~~asymmetry~~magnitude of the radio frequency signal for the test write pattern.

Claim 58 (Currently Amended): The optical recording and/or reproducing apparatus of claim 55, wherein the system controller determines an optimized width of the first pulse using the jitter value of the radio frequency signal.

Claim 59 (Currently Amended): The optical recording and/or reproducing apparatus of claim 55, wherein the system controller determines an optimized width of multi-pulses using the jitter value of the radio frequency signal.

Claim 60 (Cancelled):